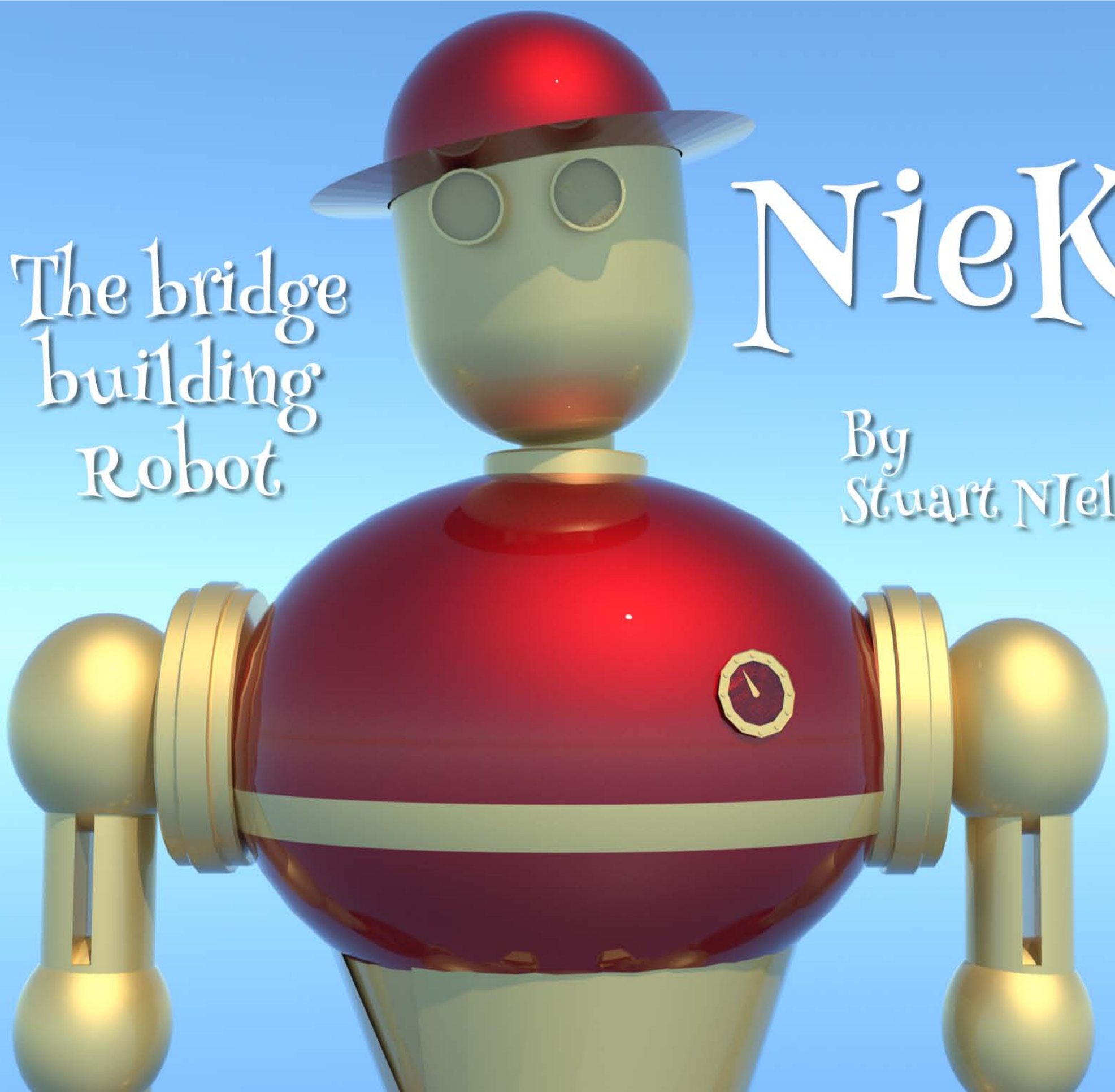
NieKo

The bridge building Robot

By
Stuart Nielsen



NieKo - The bridge building robot

Did you know there are more than
600,000 bridges in the United States
and millions more in the world?

Bridges are designed by Engineers,
who make sure that every bridge
is safe for people to cross.

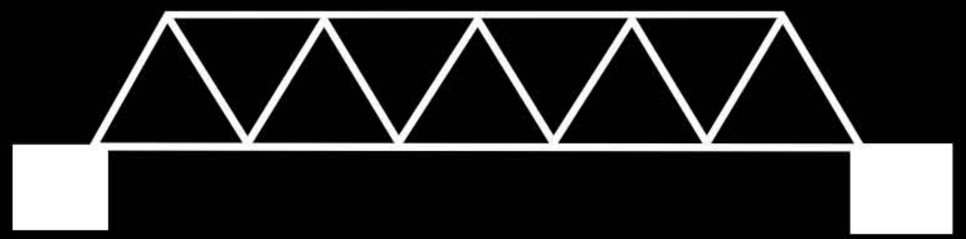
I bet you crossed a bridge today!

NieKo'S Guide to Basic Bridge Types

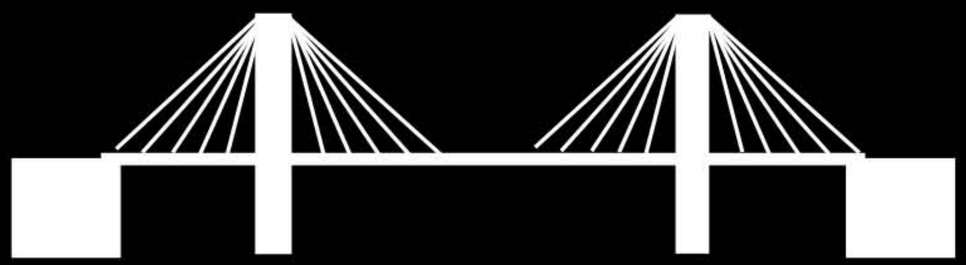
How many can you spot?

Arch Bridge

Beam Bridge



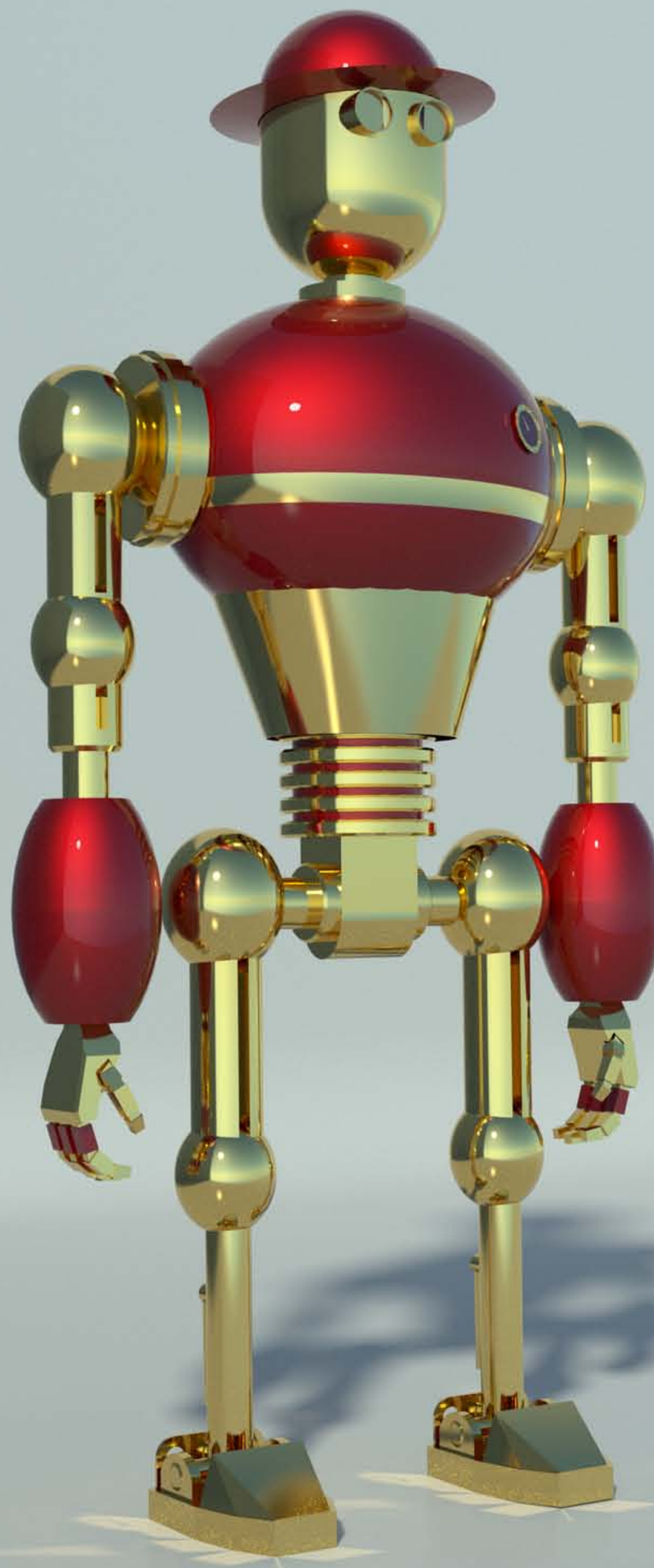
Truss Bridge



Cable Stay Bridge

Suspension Bridge

NieKo



NieKo is a state of the art bridge building robot. Designed to work in all environments and temperature conditions.

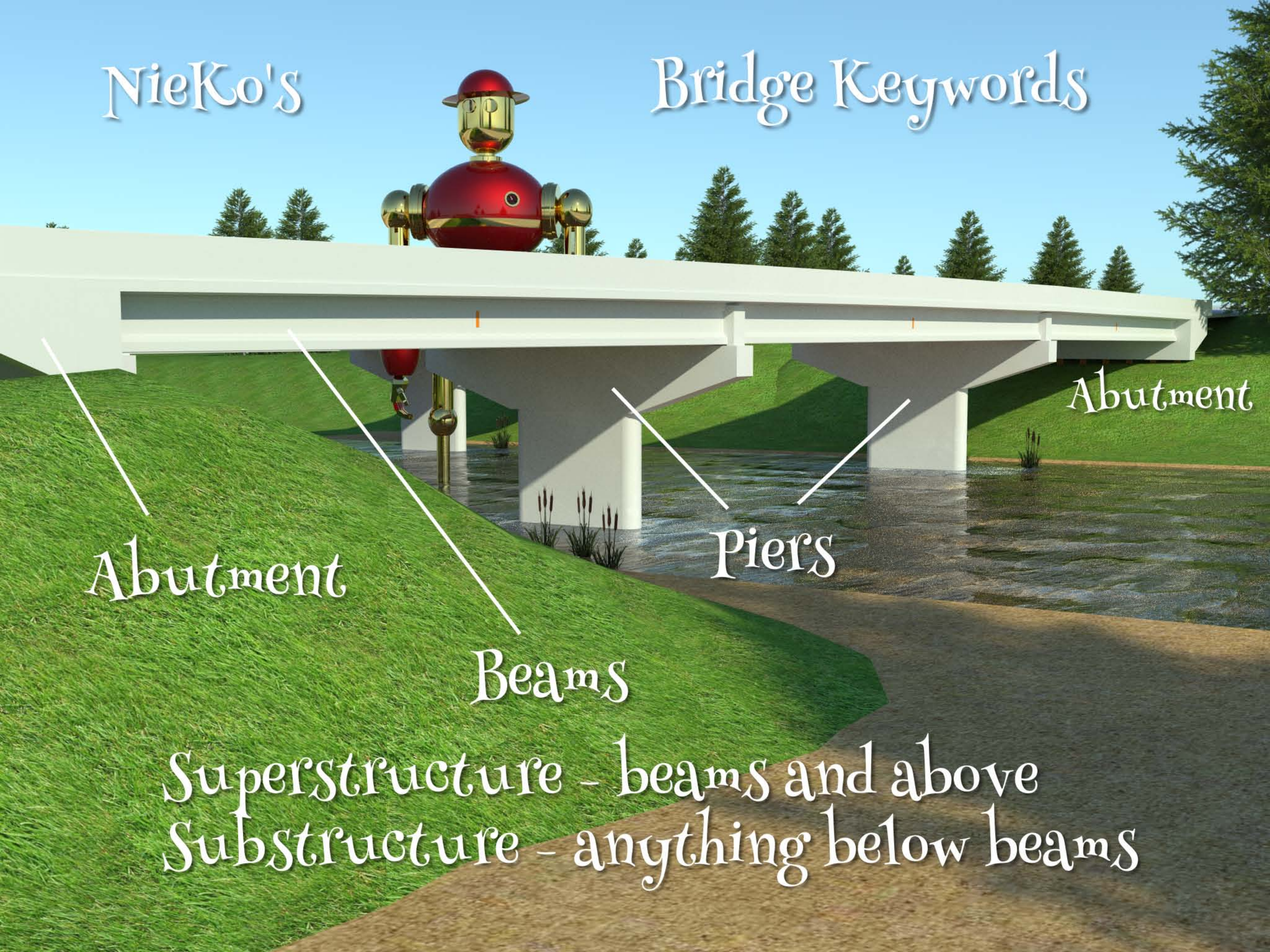
NieKo Specifications

Height:	Tall
Weight:	Heavy
Power:	Solar

Bridge Building Crew

Without bridges, how would you get to school or go to work?

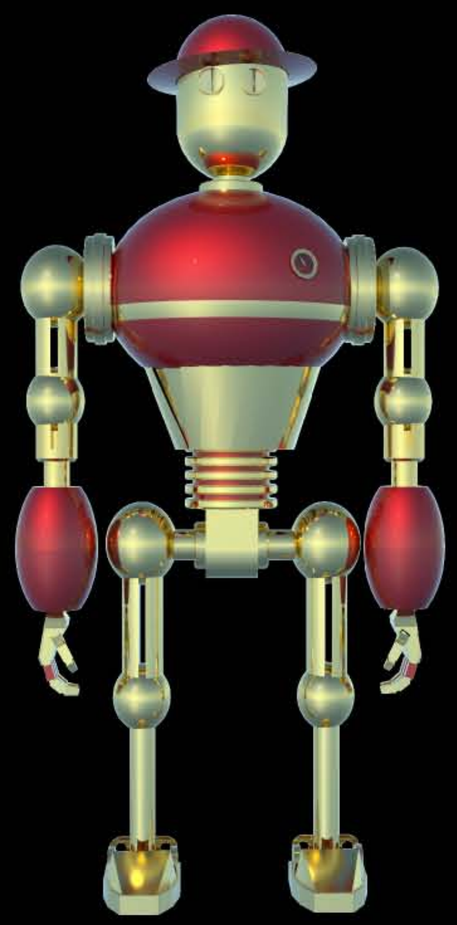
NieKo's Bridge Keywords

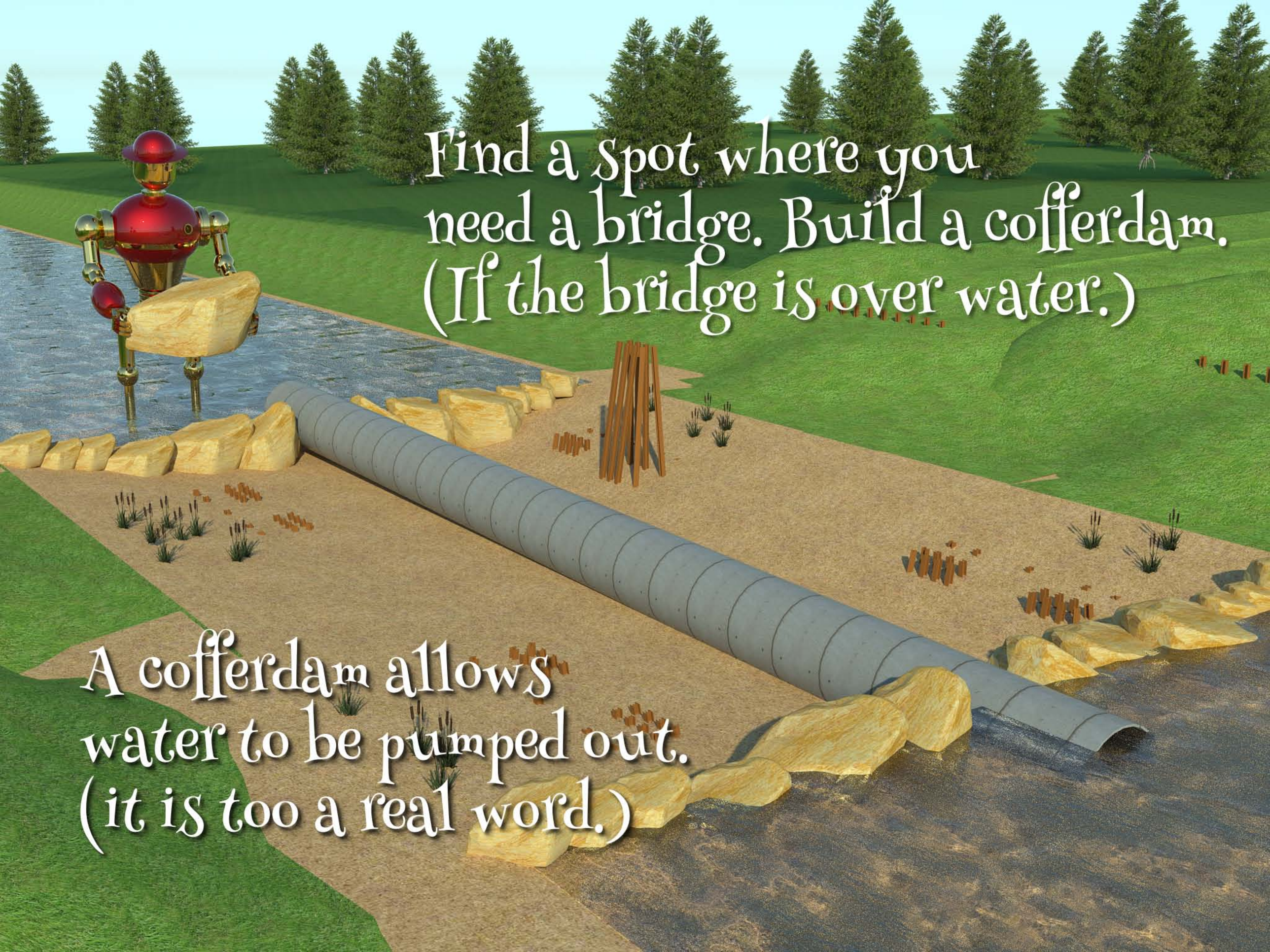


Superstructure - beams and above
Substructure - anything below beams

want to build a bridge?

Start with the substructure.

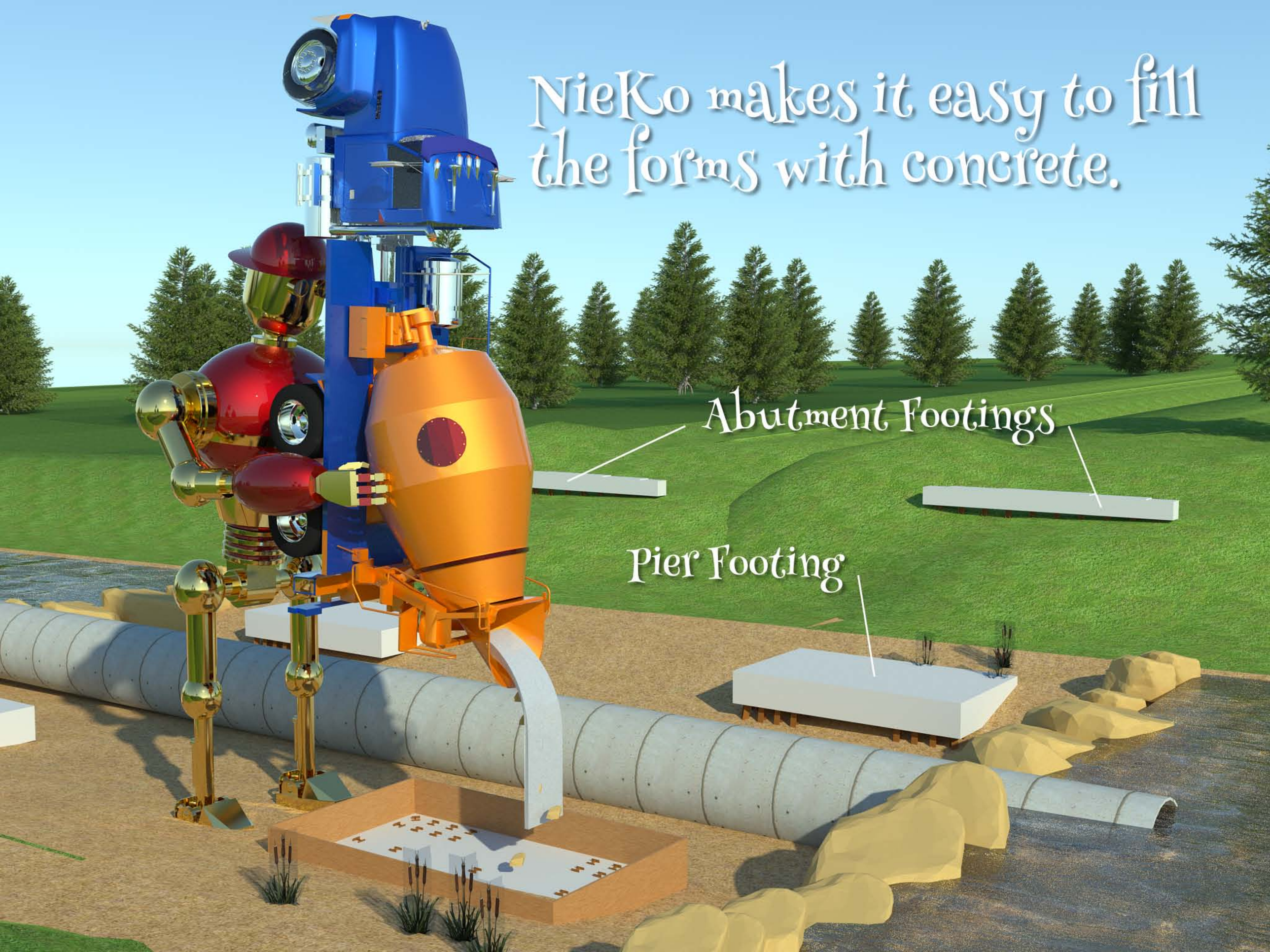



Find a spot where you need a bridge. Build a cofferdam. (If the bridge is over water.)
A cofferdam allows water to be pumped out. (it is too a real word.)


It helps if the area is dry so you can place the piles in the right places.
Steel piles are driven into the ground to help support the new bridge.


Steel piles can be over a 100 feet long!
Why do you think they call them H piles?


Hammers are used to pound the piles into the ground.
NieKo and crew are doing a great job!


NieKo makes it easy to fill the forms with concrete.
Abutment Footings
Pier Footing

NieKo then filled the pier column and pier cap.

Don't try this at home!

Pier Cap

Pier Column

218 feet

72'-5

81'-6

64'-1

NieKo's Bridge

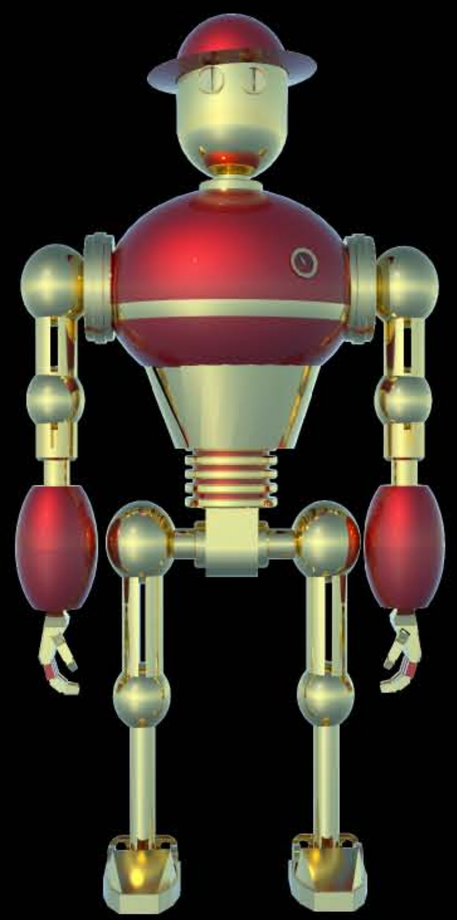
Span 1

Span 2

Span 3

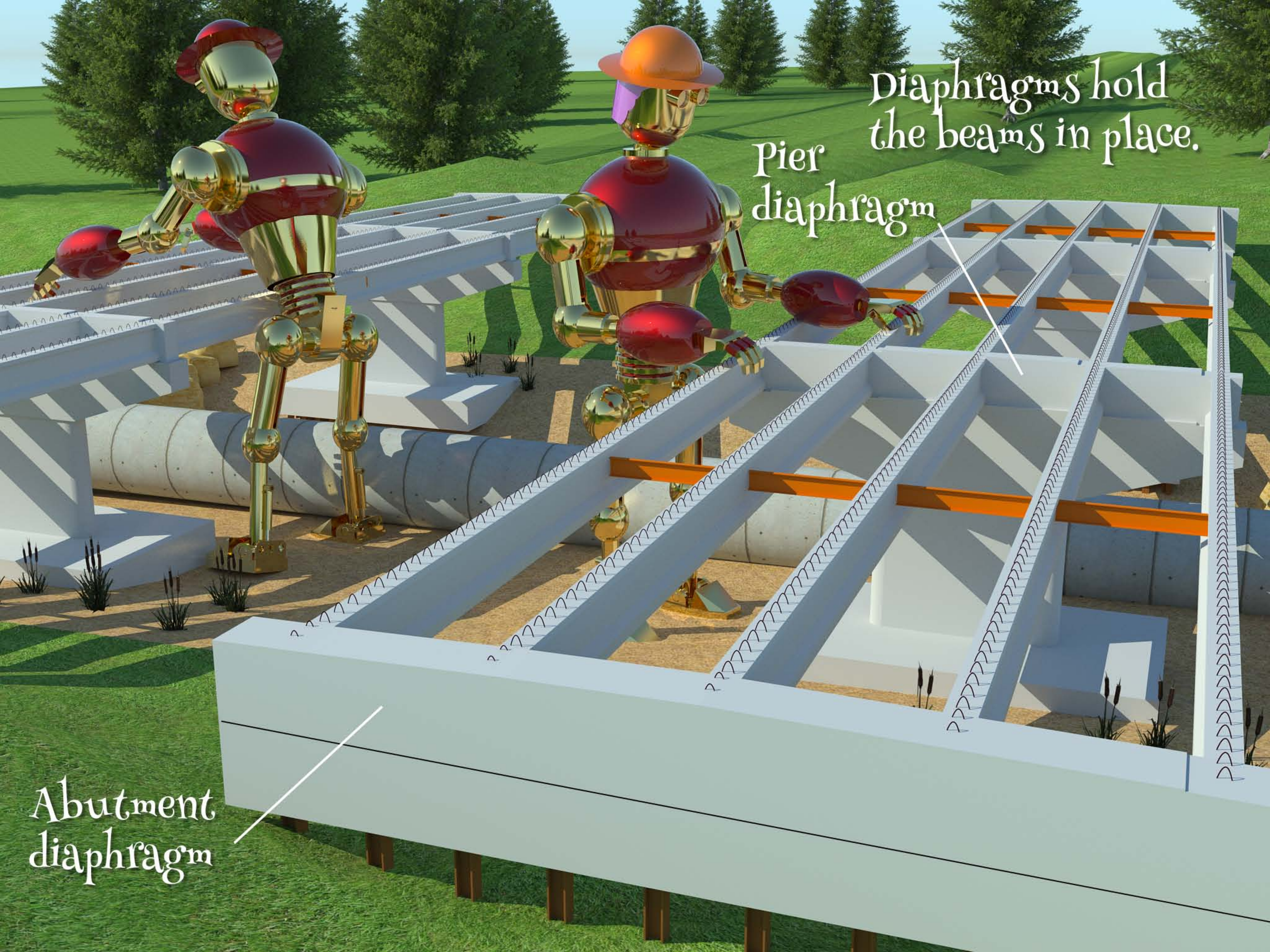
This is the bridge that NieKo is building.
A typical highway bridge is three spans long,
with beam span lengths of 60 feet to 180 feet!

Time to add the
superstructure
to the bridge.



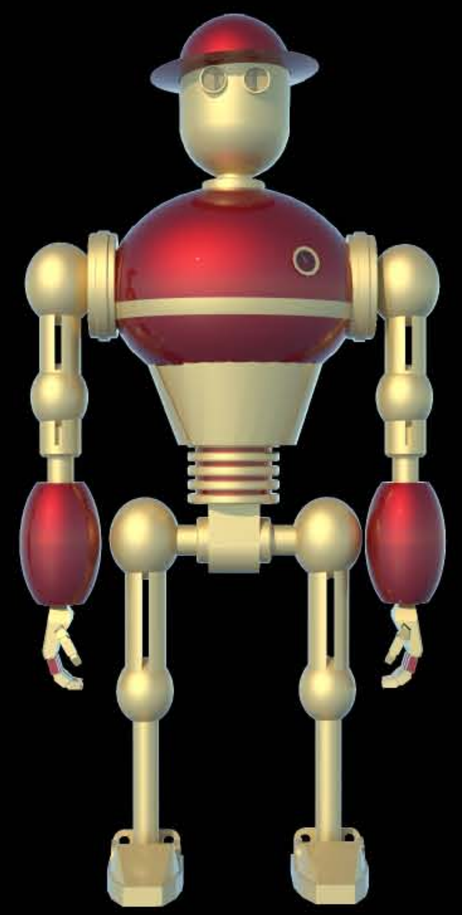
NieKo starts setting the beams for the center span.

All the beams are placed!


Diaphragms hold the beams in place.
Pier diaphragm
Abutment diaphragm

The bridge work is done in the river,
so it is time to remove the cofferdam
and let the river flow!

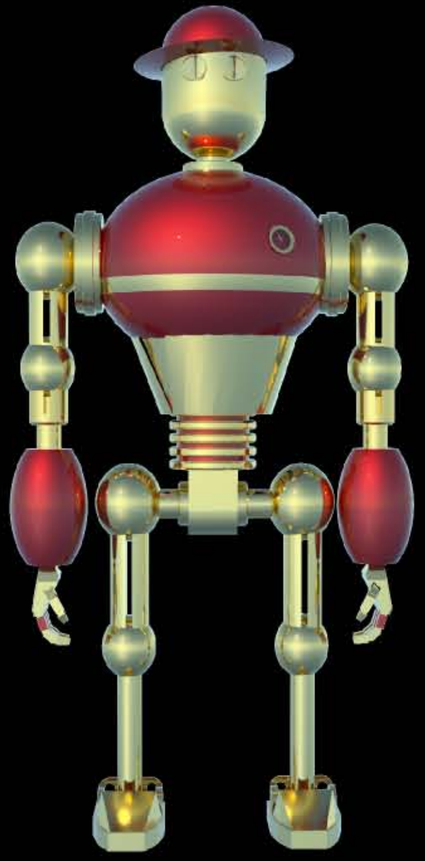
And it is time, for
NieKo to take a break
and recharge!

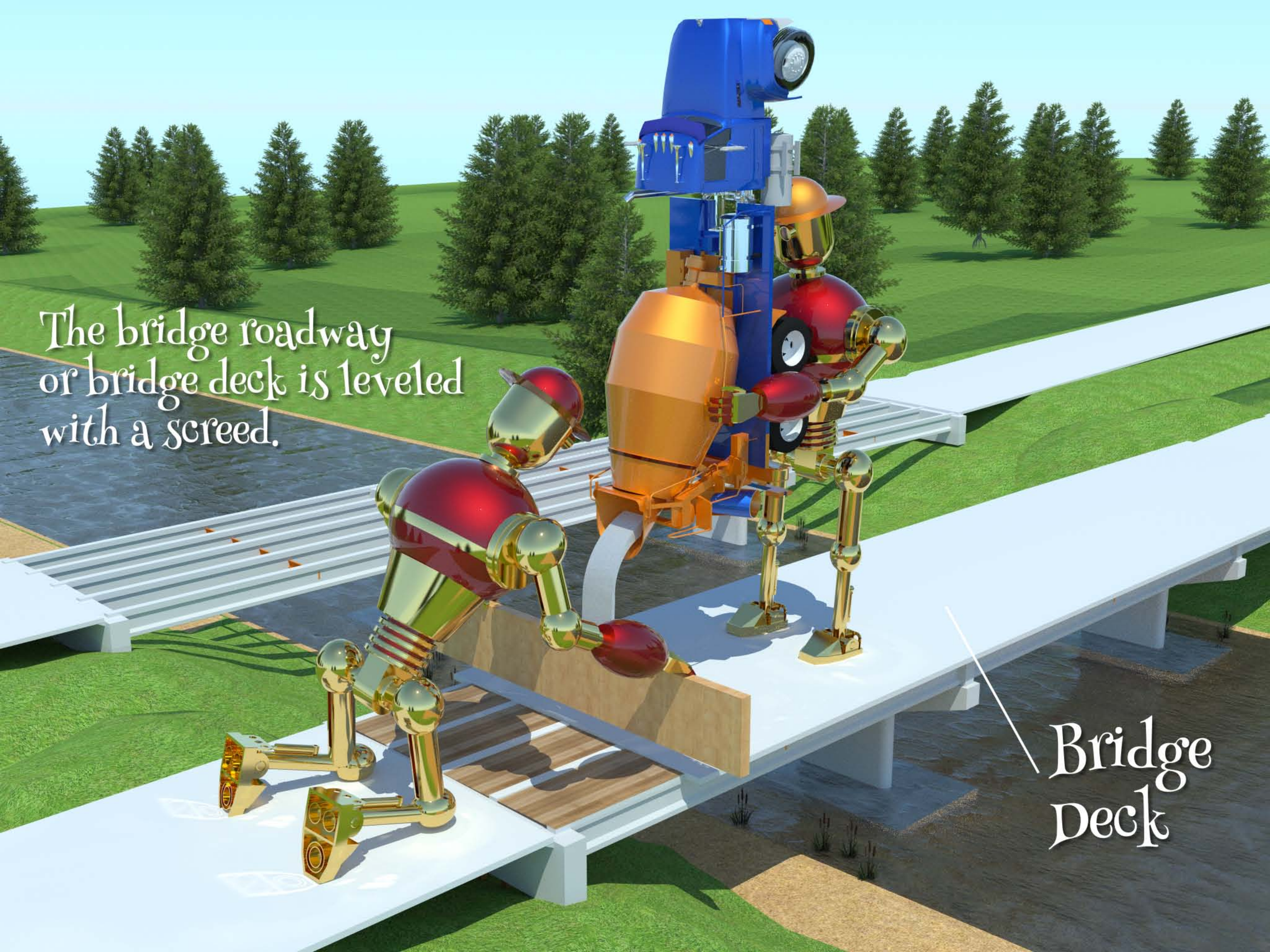



ahhhhhhh, the
water is perfect!

Even NieKo needs to recharge after a hard day's work.

Back to work!

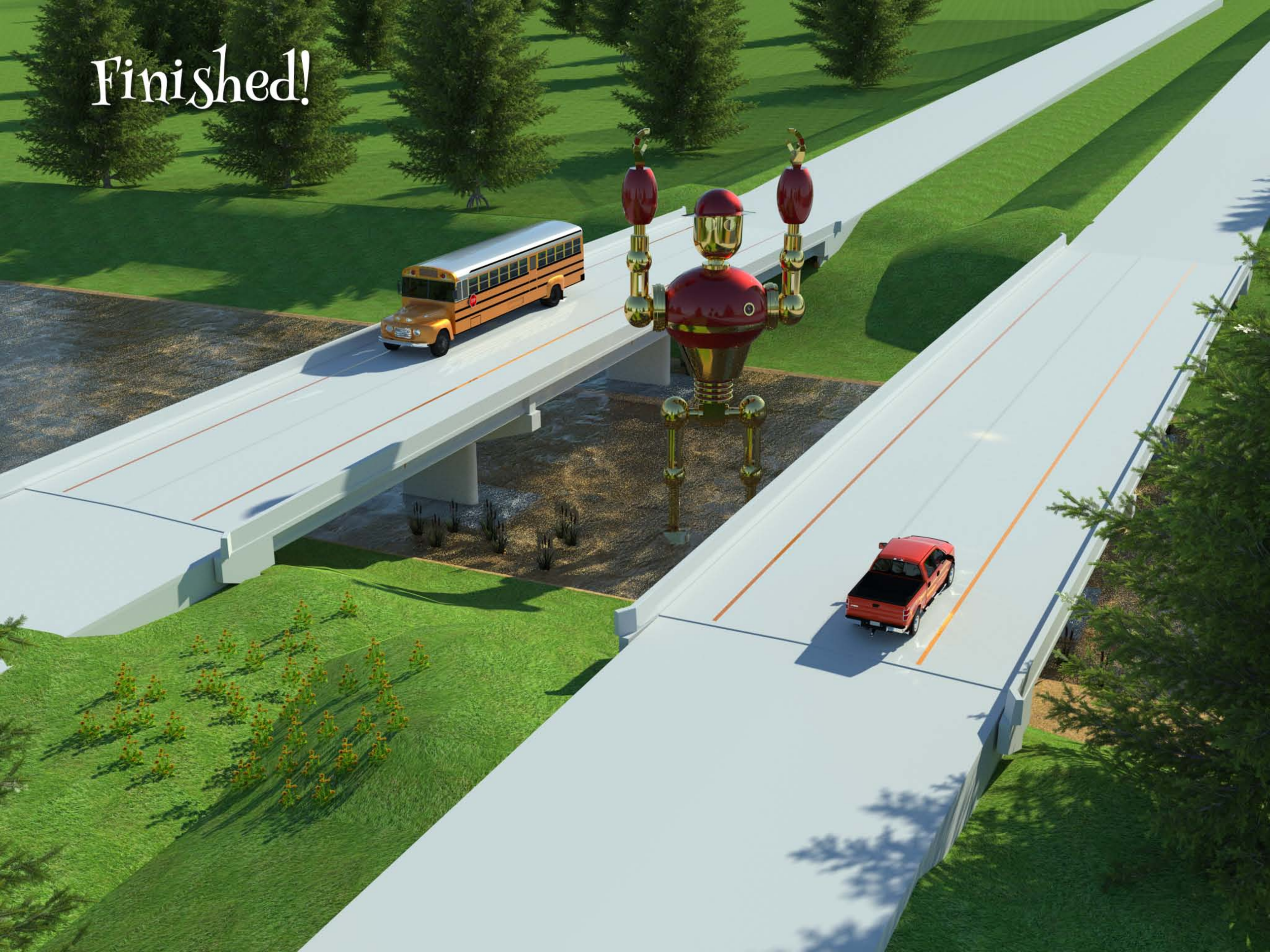



The bridge roadway or bridge deck is leveled with a screed.
Bridge Deck

The barrier rails are added to protect drivers from falling off the bridge.

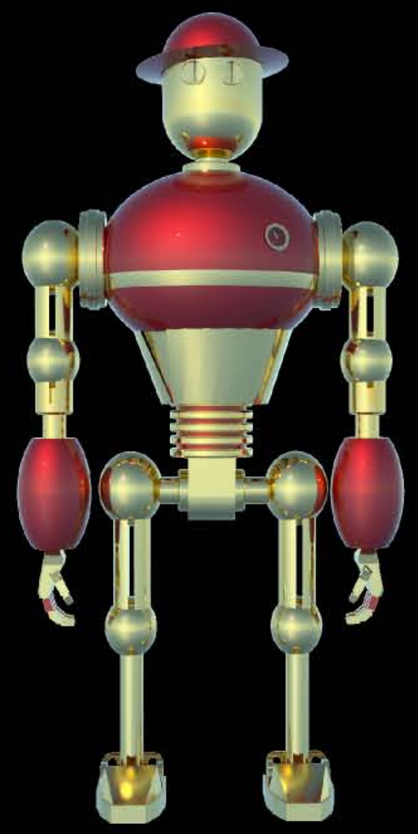
Barrier rails

Finished!



Thanks for visiting!

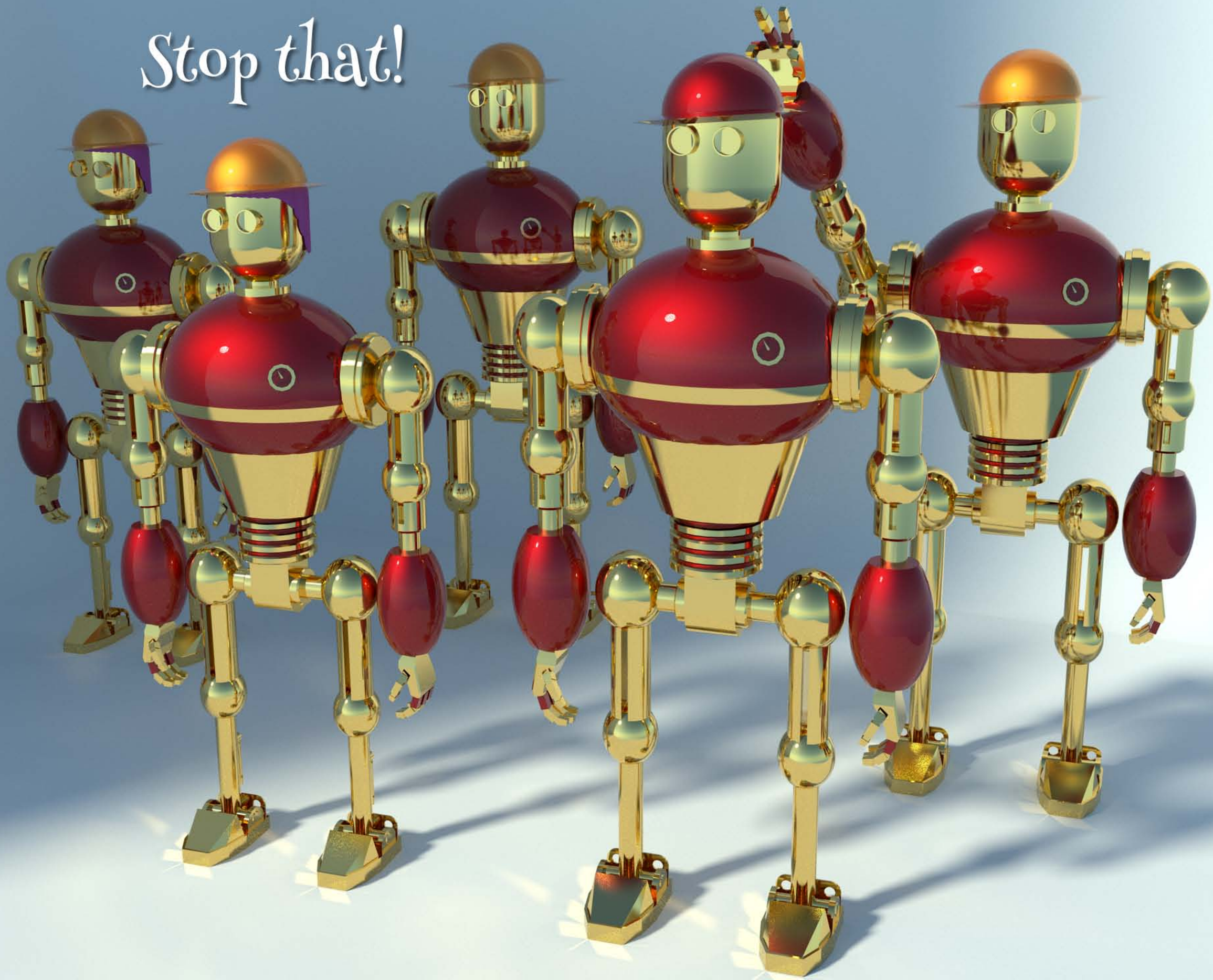
Bonus Material



Oops!

Time for a picture!

Stop that!



Author/Illustrator

Stuart Nielsen is a professional bridge engineer, dedicated to building bridges and bridge building robots.

Go to www.NieKo.com for more bridge building robots!